Online Appendix for:

Do TJ policies cause backlash?

Evidence from street name changes in Spain

June 7, 2021

Contents

1 Francoist street names

We considered as Francoist the following street names. The starting point was the list published by the Madrid City Council in 2017, where they proposed a list of 52 street names to be removed, following a report by the Historical Memory Commission.[1] This list was expanded, manually selecting from the street names most commonly changed. Indeed, among all the changes between 2001 and 2020, the five most commonly removed street names were all key Francoist figures: 'Jose Antonio,' 'Calvo Sotelo,' 'General Mola,' 'Generalísimo,' and 'General Franco.' The full list:

18 de Julio; Alcalde Conde de Mayalde; Alcazar; Alcazar de Toledo; Alferez Provisional; Almirante Francisco Moreno; Angel del Alcazar; Arco de la Victoria; Arriba Espana; Aunos; Batalla de Belchite; Batalla del Ebro; Caidos; Caidos (de Los); Caidos (los); Caidos de la Division Azul; Caidos Por la Patria; Calvo Sotelo; Calvo Sotelo (de); Capita Cortes; Capitan Cortes; Capitan Cortes (del); Capitan Haya; Capitan Luna; Carlos Pinilla; Carlos Ruiz; Carrero Blanco; Caudillo; Caudillo (del); Cerro de Garabitas; Cirilo Martin Martin; Comandante Franco; Comandante Franco; Comandante Zorita; Conde Vallellano; Crucero Baleares; Defensores del Alcazar; Defensores del Alcazar; Dieciocho de Julio; Diego Salas Pombo; Division Azul; Doctor Vallejo-Nagera; Eduardo Aunos; Ejercito Espanol; El Algabeno; Emilio Jimenez Millas; Falange Espanola; Federico Mayo; Federico Servet; Fernandez Ladreda; Francisco Franco; Franco; Garcia Morato; General; General Aranda; General Asensio Cabanillas; General Cabanellas; General Cabanellas; General Davila; General Fanjul; General Franco; General Garcia de la Herranz; General Garcia Escamez; General Kirkpatrick; General Millan Astray; General Mola; General Mola (del); General Moscardo; General Munoz Grandes; General Orgaz; General

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[1]The full list and the reasons for the choice of each street name is available online at https://bit.ly/37cLGgk (accessed 26/11/2020).

Primo de Rivera; General Queipo de Llano; General Rodrigo; General Romero Basart; General Sagardia Ramos; General Saliquet; General Sanjurjo; General Varela; General Yague; Generalisimo; Generalisimo (del); Generalisimo Franco; Gobernador Carlos Ruiz; Hermanos Falco y Alvarez de Toledo; Hermanos Garcia Noblejas; Heroes del Alcazar; Jose Antonio; Jose Antonio (de); Jose Antonio Giron; Jose Antonio Giron; Jose Antonio Primo de Rivera; Jose Luis de Arrese; Jose Maria Peman; Juan Pujol; Juan Vigon; Lepanto; Los Martires; Manuel Sarrion; Martires; Martires (los); Matias Montero; Millan Astray; Munoz Grandes; Onesimo Redondo; Pilar Primo de Rivera; Primero de Octubre; Primo de Rivera; Puerto de los Leones; Queipo de Llano; Ramiro Ledesma; Ramon Franco; Ruiz de Alda; Salas Pombo; Veintiocho de Marzo

2   DiD sample and treatment strength

Figure 1 shows the treatment strength (i.e. the number of Francoist name removals) depending on the number of streets with Francoist names in June 2016. Because of scale problems, the city of Madrid was removed from the graph, even though it follows a similar pattern: Madrid had 60 streets with Francoist names in mid 2016, and removed 52 of those during the period. The graph shows that most streets had very few streets in 2016 and removed those (usually 1 or 2), while a small subset had more streets and removed either all or part of them.

Figure 2 shows the distribution of remaining streets with Francoist names on January 1st, 2019, among those municipalities that were classified as treated in the analyses. Most municipalities that were treated between mid 2016 and late 2018 removed all their streets with Francoist names, and only a small minority retained a small number of Francoist streets (mostly one or two).

In many cases, differences in treatment strength—and the fact that there were remaining Francoist streets names after this period—is due to the fact that the list of Francoist names we use (list in previous section 1) is very comprehensive: many municipalities likely removed the most famous and relevant Francoist names, which arguably were the ones most likely to produce some kind of effect on local political preferences.
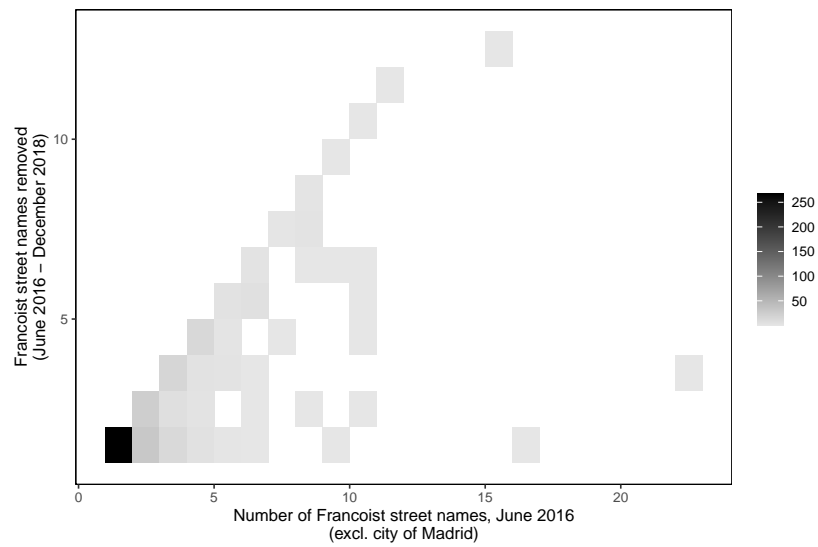
Figure 1: Treatment strength among the treated
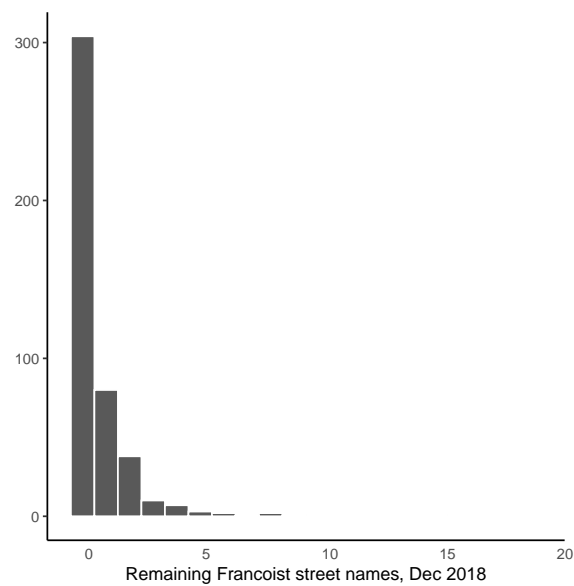
Figure 2: Treatment strength among the treated

3 Francoist street name removals (descriptives)

Figure 3 shows the number of Francoist street name removals by province in three different time periods: 2001–2020, 2011–2016, and 2016–2018. Figure 4 shows the share of Francoist street by province at three different points in time: June 2001, January 2010, and June 2016.
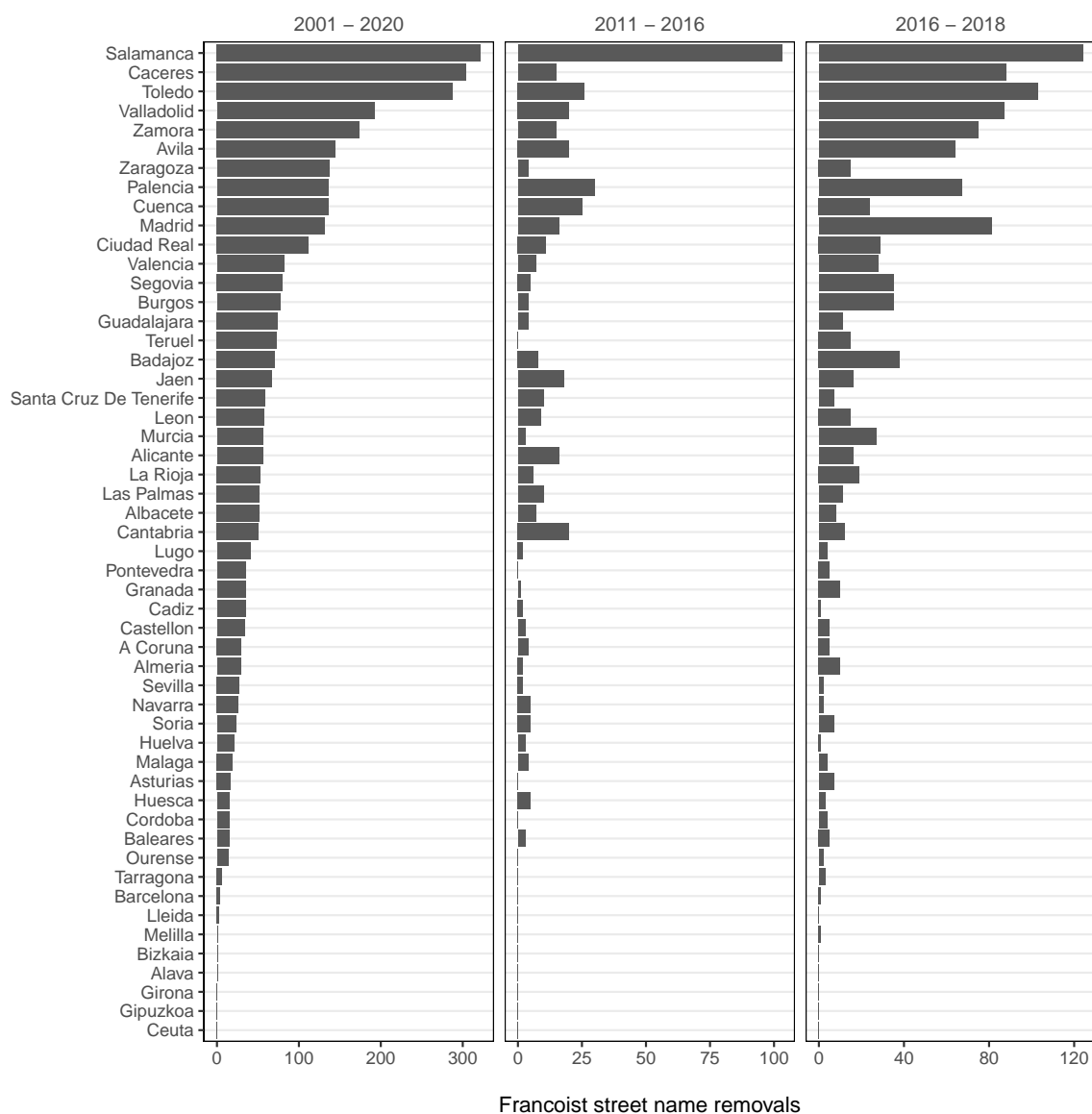
Figure 3: Number of Francoist street name removals over time
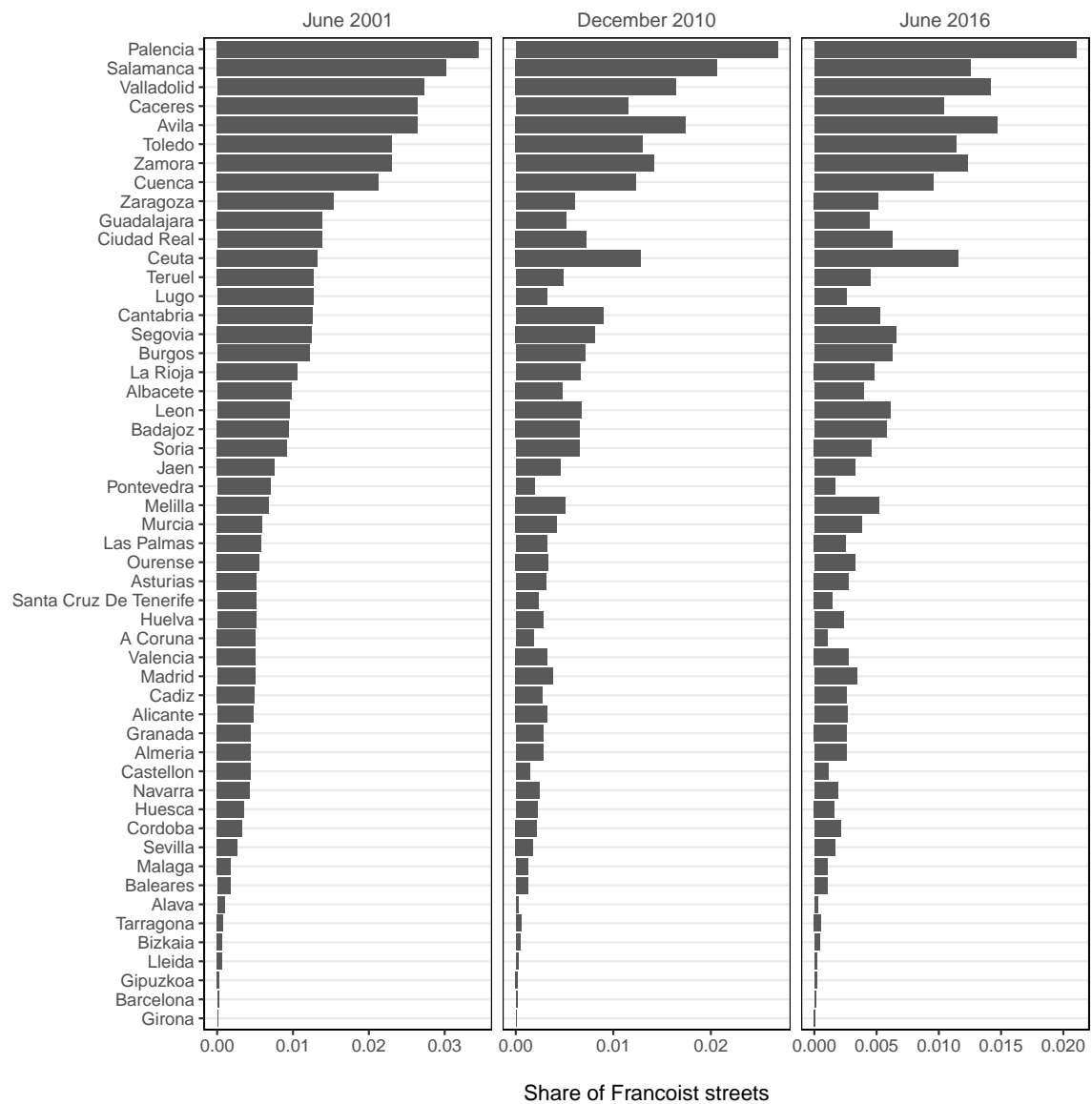
Figure 4: Share of Francoist streets in each province

4 Francoist street name removals (treated vs control)

Table 1 shows the results of regressing a binary indicator of Francoist street name removal between 2016 and 2018 (the period covered in the DiD analyses in the main text) on a set of explanatory variable. The sample only includes those municipalities that still had Francoist streets in June 2016. The picture that emerges from these analyses is that it was mainly smaller municipalities with a high number of Francoist streets at the beginning of the period the ones that were more likely to remove Francoist street names. Moreover, following figures 3 and **??**, these municipalities were located mostly in the center of Spain. These results are in line with the idea that municipalities that still had and changed street names during this period were probably the ones that had not done so because of political inaction and that, if anything, the selection bias goes against our main hypothesis.

Table 1: Logit regression on Francoist street name removal (2016–2018)

	(1)	(2)	(3)
(Intercept)	0.326***	0.150*	−0.289
	(0.044)	(0.062)	(0.206)
Leftist mayor 2015	−0.008	0.021	0.024
	(0.021)	(0.022)	(0.026)
Log. Population 2011	−0.051***	−0.038***	−0.030***
	(0.005)	(0.006)	(0.008)
Log. No. Francoist streets June 2016	0.339***	0.328***	0.342***
	(0.023)	(0.024)	(0.027)
PP support, June 2016			0.159
			(0.130)
Vox support, June 2016			−2.861
			(3.558)
Turnout, June 2016			0.438+
			(0.229)
CCAA Fixed Effects	No	Yes	Yes
Observations	1,636	1,636	1,167
Log Likelihood	-867.939	-841.697	-523.509
Akaike Inf. Crit.	1,743.879	1,727.394	1,091.019

Note: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Only including municipalities that had at least one street with Francoist names in June 2016.

Table 2: Mean comparison municipalities treated/control

Party	In sample	Out of sample	Diff	P-value
		April 2019		
PP	30.82%	25.14%	5.68	0.000***
PSOE	29.66%	32.51%	-2.84	0.000***
VOX	12.98%	12.05%	0.93	0.004**
		June 2016		
PP	49.57%	42.45%	7.12	0.000***
PSOE	25.47%	27.88%	-2.41	0.000***
VOX	0.21%	0.21%	0	0.953
		December 2015		
PP	45.49%	38.37%	7.12	0.000***
PSOE	26.04%	28.56%	-2.52	0.000***
VOX	0.28%	0.21%	0.07	0.010**
		November 2011		
PP	59.72%	53.02%	6.7	0.000***
PSOE	28.89%	32.13%	-3.24	0.000***
		March 2008		
PP	53.21%	46.72%	6.49	0.000***
PSOE	40.4%	44.52%	-4.12	0.000***
		March 2004		
PP	53.6%	45.74%	7.86	0.000***
PSOE	39.41%	44.08%	-4.67	0.000***
		March 2000		
PP	57.56%	50.54%	7.01	0.000***
PSOE	34.08%	37.82%	-3.74	0.000***

*Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.*

5 Francoist street names in 2016 (in-sample vs out-of-sample)

Table 3: Mean comparison municipalities in/out of sample (with/without Francoist street names in June 2016)

Party	In sample	Out of sample	Diff	P-value
		April 2019		
PP	26.72%	23.95%	2.77	0.000***
PSOE	31.72%	28.04%	3.68	0.000***
VOX	12.31%	9.33%	2.97	0.000***
		June 2016		
PP	44.42%	38.49%	5.94	0.000***
PSOE	27.21%	23.13%	4.08	0.000***
VOX	0.21%	0.2%	0.01	0.650
		December 2015		
PP	40.34%	35.26%	5.08	0.000***
PSOE	27.86%	23.26%	4.6	0.000***
VOX	0.23%	0.22%	0	0.796
		November 2011		
PP	54.87%	47.07%	7.8	0.000***
PSOE	31.23%	28.01%	3.23	0.000***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4: Mean comparison municipalities with/without Francoist street names in June 2001

Party	In sample	Out of sample	Diff	P-value
		April 2019		
PP	27.23%	23.47%	3.75	0.000***
PSOE	31.53%	27.75%	3.77	0.000***
VOX	12.22%	9.08%	3.15	0.000***
		June 2016		
PP	44.85%	37.74%	7.11	0.000***
PSOE	26.9%	22.86%	4.04	0.000***
VOX	0.21%	0.2%	0.02	0.278
		December 2015		
PP	40.85%	34.57%	6.28	0.000***
PSOE	27.5%	22.95%	4.55	0.000***
VOX	0.24%	0.22%	0.02	0.260
		November 2011		
PP	55.17%	46.2%	8.96	0.000***
PSOE	31%	27.78%	3.21	0.000***
		March 2008		
PP	48.65%	41.07%	7.58	0.000***
PSOE	42.99%	39.63%	3.37	0.000***
		March 2004		
PP	48.49%	41.57%	6.92	0.000***
PSOE	42.09%	36.68%	5.41	0.000***
		March 2000		
PP	53.18%	46.81%	6.37	0.000***
PSOE	36.21%	31.46%	4.74	0.000***

*Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.*

Table 5: Voting for PP/PSOE and having a Francoist street name in June 2016

	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)	−0.208***	−0.183***	−0.179***	−0.246***	−0.268***	−0.248***
	(0.048)	(0.049)	(0.049)	(0.048)	(0.042)	(0.044)
PP (2000/03)	0.126*					
	(0.052)					
PSOE (2000/03)	−0.149**					
	(0.053)					
PP (2004/03)		0.128*				
		(0.054)				
PSOE (2004/03)		−0.200***				
		(0.055)				
PP (2008/03)			0.131*			
			(0.056)			
PSOE (2008/03)			−0.197***			
			(0.055)			
PP (2011/11)				0.212***		
				(0.051)		
PSOE (2011/11)				−0.157**		
				(0.056)		
PP (2015/12)					0.263***	
					(0.045)	
PSOE (2015/12)					−0.138**	
					(0.054)	
PP (2016/06)						0.237***
						(0.046)
PSOE (2016/06)						−0.175**
						(0.057)
Log. Pop 2011	0.073***	0.076***	0.074***	0.072***	0.075***	0.074***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
CCAA Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,593	7,890	7,893	7,897	7,897	7,897
Akaike Inf. Crit.	6,625.822	6,839.057	6,837.529	6,829.387	6,830.442	6,827.124

Note: $+p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001.$

Table 6: Voting for PP/PSOE and having a Francoist street name in June 2001

	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)	−0.269***	−0.252***	−0.231***	−0.338***	−0.328***	−0.305***
	(0.052)	(0.053)	(0.054)	(0.053)	(0.047)	(0.048)
PP (2000/03)	0.234***					
	(0.056)					
PSOE (2000/03)	−0.083					
	(0.058)					
PP (2004/03)		0.239***				
		(0.059)				
PSOE (2004/03)		−0.125*				
		(0.061)				
PP (2008/03)			0.205***			
			(0.061)			
PSOE (2008/03)			−0.126*			
			(0.061)			
PP (2011/11)				0.340***		
				(0.056)		
PSOE (2011/11)				−0.047		
				(0.062)		
PP (2015/12)					0.358***	
					(0.050)	
PSOE (2015/12)					−0.066	
					(0.059)	
PP (2016/06)						0.327***
						(0.051)
PSOE (2016/06)						−0.105^{+}
						(0.063)
Log. Pop 2011	0.078***	0.081***	0.079***	0.077***	0.082***	0.080***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
CCAA Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,593	7,890	7,893	7,897	7,897	7,897
Akaike Inf. Crit.	8,001.884	8,353.067	8,365.240	8,343.314	8,342.123	8,342.252

Note: $+p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001.$

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6 Additional analysis (cross-sectional)

Table 7: Francoist street name removal and change in electoral support for Vox during 2019

	Full sample	Limited sample
	(1)	(2)
(Intercept)	2.195***	2.362***
	(0.119)	(0.156)
Francoist street name removal	−0.015	0.003
	(0.020)	(0.019)
Unemployment 2019	0.518	0.450
	(0.337)	(0.404)
Turnout April 2019	−0.623***	−0.799***
	(0.133)	(0.178)
Turnout Nov 2019	−0.009$^+$	−0.018**
	(0.005)	(0.006)
CCAA Fixed Effects	Yes	Yes
Observations	7,552	2,153
R^2	0.078	0.134
Adjusted R^2	0.075	0.125

Note: $+p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001$.
The main independent variable refers to the removal of Francoist street names between June 2001 and December 2018. The limited sample corresponds to municipalities that had Francoist street names in June 2001.

Tables 8 and 9 replicate the analyses in the main text—plus the model using the change between April and November as dependent variable—using as independent variable the removal of Francoist streets between 2011 and 2018, using the full and limited samples, respectively.

Table 8: Electoral support for Vox and Francoist street name removal

	Apr 2019	Nov 2019	Change
	(1)	(2)	(3)
(Intercept)	0.078***	0.145***	2.197***
	(0.009)	(0.010)	(0.119)
Francoist street name removal	0.010***	0.013***	−0.011
	(0.002)	(0.002)	(0.026)
Unemployment 2019	0.083***	0.195***	0.517
	(0.025)	(0.031)	(0.337)
Turnout April 2019	0.005		−0.623***
	(0.010)		(0.133)
Turnout Nov 2019		−0.037***	
		(0.011)	
Log. Population	0.003***	0.006***	−0.009+
	(0.000)	(0.000)	(0.005)
CCAA Fixed Effects	Yes	Yes	Yes
Observations	7,819	7,820	7,552
R^2	0.441	0.499	0.078
Adjusted R^2	0.440	0.497	0.075

Note: $+p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001$. The main independent variable refers to the removal of Francoist street names between December 2010 and December 2018.

Table 9: Electoral support for Vox and Francoist street name removal

	Apr 2019	Nov 2019	Change
	(1)	(2)	(3)
(Intercept)	0.115***	0.218***	2.476***
	(0.020)	(0.022)	(0.174)
Francoist street name removal	0.006*	0.007*	−0.012
	(0.002)	(0.003)	(0.022)
Unemployment 2019	0.002	0.097	0.381
	(0.051)	(0.062)	(0.443)
Turnout April 2019	−0.012		−0.901***
	(0.023)		(0.200)
Turnout Nov 2019		−0.088***	
		(0.025)	
Log. Population	0.002*	0.003***	−0.023**
	(0.001)	(0.001)	(0.007)
CCAA Fixed Effects	Yes	Yes	Yes
Observations	1,791	1,792	1,782
R^2	0.269	0.296	0.129
Adjusted R^2	0.260	0.287	0.118

Note: $+p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001$. The main independent variable refers to the removal of Francoist street names between December 2010 and December 2018. Only municipalities that had Francoist street names in June 2011 were included.

7 Robustness tests (difference-in-differences)

Table 10 shows the robustness tests for the DiD analyses using electoral support for Vox as the dependent variable, while tables 11 and **??** do the same but using PP and PSOE share, respectively, as the dependent variable. All models in these tables include elections before June 2016: December 2015 in the case of Vox, and both December 2015 and November 2011 in the case of PP. Model 2 extends the dependent variable to the first half of 2019, accounting for potential delays in the registration of name changes. Model 3 uses the independent variable in continuous form, namely, the logged number of changes. Model 4 restricts the sample to municipalities where Vox got more than 0 votes in 2016 elections. **DISCUSS**

Table 10: Francoist street name removal and increase in electoral support for Vox

	(1)	(2)	(3)	(4)
(Intercept)	−0.968**	−0.969**	−0.929**	0.127
	(0.326)	(0.326)	(0.324)	(0.399)
Francoist street name removal	−0.078	−0.066	−0.163	−0.231
	(0.220)	(0.215)	(0.188)	(0.253)
Election December 2015	−0.101	−0.102	−0.109	−0.119
	(0.148)	(0.149)	(0.144)	(0.159)
Election April 2019	12.319***	12.305***	12.300***	12.898***
	(0.142)	(0.144)	(0.139)	(0.153)
Francoist removal × Dec 2015	−0.019	−0.011	0.021	−0.048
	(0.314)	(0.306)	(0.253)	(0.362)
Francoist removal × April 2019	0.724*	0.735*	0.746**	0.789*
	(0.299)	(0.293)	(0.244)	(0.347)
Controls	Yes	Yes	Yes	Yes
CCAA Fixed Effects	Yes	Yes	Yes	Yes
Observations	3,303	3,303	3,303	2,259
R^2	0.802	0.802	0.802	0.844
Adjusted R^2	0.801	0.801	0.801	0.843

Note: $+ p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. All models also include elections before June 2016 (December 2015). Model 2 extends the DV (name removal) to the first half of 2019. Model 3 uses the IV in continuous form (logged number of changes). Model 4 restricts the sample to municipalities where Vox got more than 0 votes. Controls include a dummy for a leftist major elected in 2015 local elections, logged population in 2011, logged number of Francoist streets in t_0, and the unemployment rate in January 2016. Only municipalities that had at least one street with a Francoist name in t_0 (June 2016) were included in the sample.

Table 11: Francoist street name removal and increase in electoral support for PP

	(1)	(2)	(3)	(4)
(Intercept)	49.323***	49.312***	49.484***	43.384***
	(0.593)	(0.594)	(0.589)	(0.751)
Francoist street name removal	1.009*	0.974+	0.841+	0.634
	(0.511)	(0.502)	(0.436)	(0.695)
Election March 2000	8.091***	8.015***	8.132***	8.539***
	(0.374)	(0.379)	(0.363)	(0.428)
Election March 2004	3.291***	3.273***	3.310***	3.614***
	(0.374)	(0.379)	(0.363)	(0.428)
Election March 2008	4.267***	4.264***	4.218***	6.074***
	(0.374)	(0.379)	(0.363)	(0.428)
Election November 2011	10.569***	10.561***	10.538***	12.127***
	(0.374)	(0.379)	(0.363)	(0.428)
Election December 2015	−4.075***	−4.063***	−4.039***	−4.218***
	(0.374)	(0.379)	(0.363)	(0.428)
Election April 2019	−17.382***	−17.343***	−17.379***	−17.657***
	(0.376)	(0.381)	(0.364)	(0.428)
Francoist removal × March 2000	−0.106	0.161	−0.241	0.132
	(0.711)	(0.698)	(0.594)	(0.970)
Francoist removal × March 2004	0.741	0.754	0.634	0.674
	(0.711)	(0.697)	(0.594)	(0.970)
Francoist removal × March 2008	−0.631	−0.581	−0.430	−0.087
	(0.711)	(0.697)	(0.594)	(0.970)
Francoist removal × Nov 2011	−0.425	−0.369	−0.295	0.040
	(0.711)	(0.697)	(0.594)	(0.970)
Francoist removal × Dec 2015	−0.007	−0.049	−0.132	−0.158
	(0.711)	(0.697)	(0.594)	(0.970)
Francoist removal × April 2019	−1.422*	−1.466*	−1.352*	−1.781+
	(0.712)	(0.699)	(0.594)	(0.970)
Controls	Yes	Yes	Yes	Yes
CCAA Fixed Effects	Yes	Yes	Yes	Yes
Observations	11,325	11,325	11,325	5,502
R^2	0.683	0.683	0.683	0.718
Adjusted R^2	0.682	0.682	0.682	0.717

Note: $+ p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. All models also include elections before June 2016 (2000–2015). Model 2 extends the DV (name removal) to the first half of 2019. Model 3 uses the IV in continuous form (logged number of changes). Model 4 restricts the sample to municipalities where Vox got more than 0 votes. Controls include a dummy for a leftist major elected in 2015 local elections, logged population in 2011, logged number of Francoist streets in t_0, and the unemployment rate in January 2016. Only municipalities that had at least one street with a Francoist name in t_0 (June 2016) were included in the sample.

Table 12: Francoist street name removal and increase in electoral support for PSOE

	(1)	(2)	(3)	(4)
(Intercept)	43.175***	43.245***	43.096***	51.206***
	(0.562)	(0.564)	(0.559)	(0.705)
Francoist street name removal	−0.564	−0.786	−0.037	0.310
	(0.490)	(0.481)	(0.415)	(0.654)
Election March 2000	6.449***	6.420***	6.456***	7.318***
	(0.357)	(0.361)	(0.346)	(0.403)
Election March 2004	6.890***	6.827***	6.943***	6.638***
	(0.357)	(0.361)	(0.346)	(0.403)
Election March 2008	−5.501***	−5.565***	−5.396***	−6.722***
	(0.357)	(0.361)	(0.346)	(0.403)
Election November 2011	−9.073***	−9.160***	−9.044***	−10.212***
	(0.357)	(0.361)	(0.346)	(0.403)
Election December 2015	−9.755***	−9.839***	−9.682***	−10.713***
	(0.357)	(0.361)	(0.346)	(0.403)
Election April 2019	−5.127***	−5.184***	−5.066***	−6.637***
	(0.357)	(0.361)	(0.346)	(0.403)
Francoist removal × March 2000	−1.026	−0.863	−0.994$^+$	−1.004
	(0.677)	(0.664)	(0.563)	(0.911)
Francoist removal × March 2004	−0.477	−0.232	−0.632	−0.737
	(0.677)	(0.664)	(0.563)	(0.911)
Francoist removal × March 2008	0.402	0.595	0.021	−0.208
	(0.677)	(0.664)	(0.563)	(0.911)
Francoist removal × Nov 2011	1.120$^+$	1.344*	0.959$^+$	0.418
	(0.677)	(0.664)	(0.563)	(0.911)
Francoist removal × Dec 2015	1.234$^+$	1.443*	0.916	0.158
	(0.677)	(0.664)	(0.563)	(0.911)
Francoist removal × April 2019	0.801	0.946	0.551	0.139
	(0.677)	(0.664)	(0.563)	(0.911)
Controls	Yes	Yes	Yes	Yes
CCAA Fixed Effects	Yes	Yes	Yes	Yes
Observations	11,300	11,300	11,300	5,493
R^2	0.572	0.572	0.572	0.671
Adjusted R^2	0.570	0.570	0.570	0.669

Note: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. All models also include elections before June 2016 (2000–2015). Model 2 extends the DV (name removal) to the first half of 2019. Model 3 uses the IV in continuous form (logged number of changes). Model 4 restricts the sample to municipalities where Vox got more than 0 votes. Controls include a dummy for a leftist major elected in 2015 local elections, logged population in 2011, logged number of Francoist streets in t_0, and the unemployment rate in January 2016. Only municipalities that had at least one street with a Francoist name in t_0 (June 2016) were included in the sample.